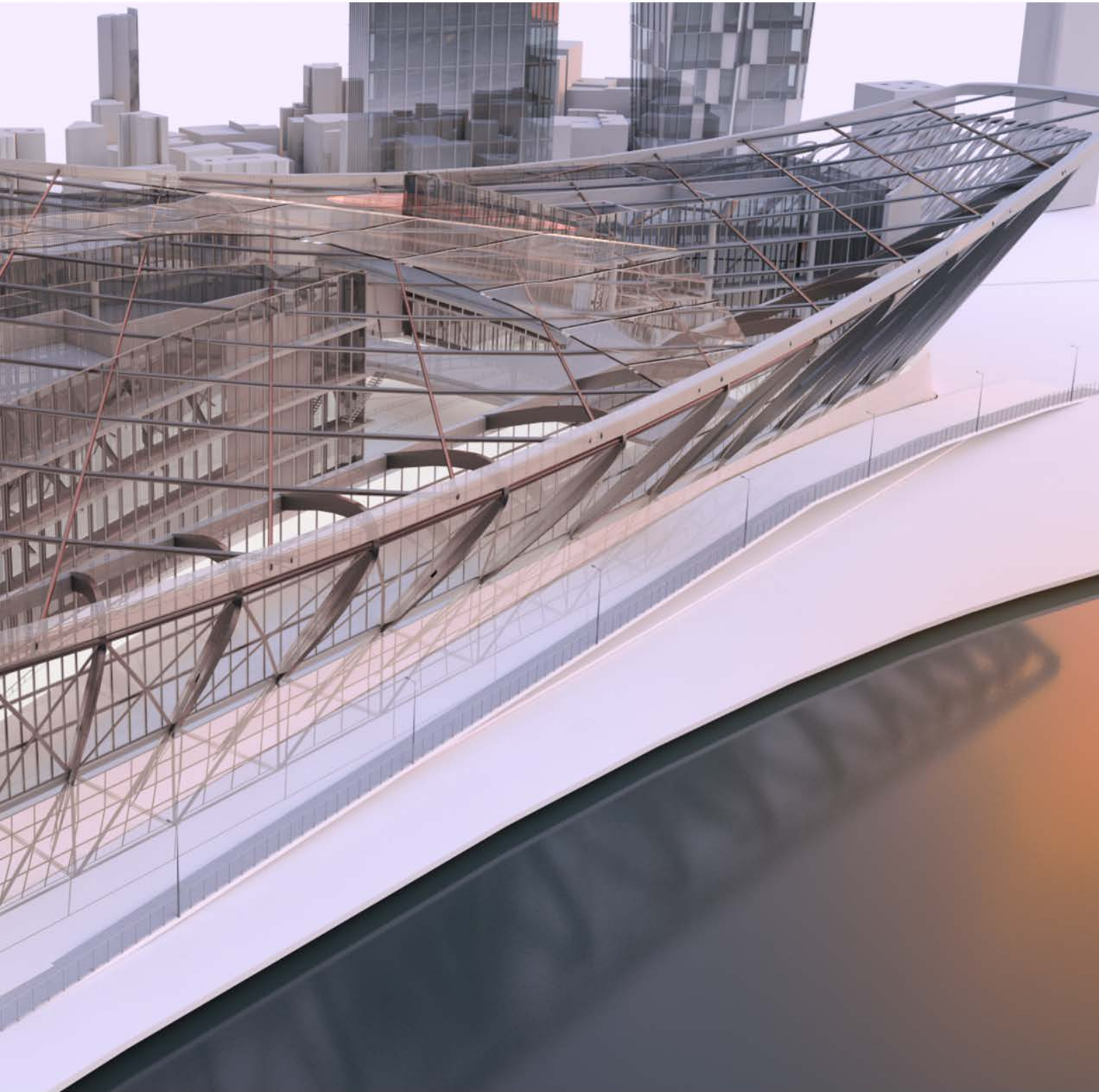


PACKAGES - 2022 Release



FEATURES	STANDARD	PREMIUM	ULTIMATE	Rebar Design & Detailing module
MODELING				
2D and 3D structures	✓	✓	✓	○
Linear elements: beam, S beam, variable beam, cable, tie, strut, bar	✓	✓	✓	○
Planar elements: shell, plate, membrane, plane strain, steel decks	✓	✓	✓	○
Punctual, linear and surface supports; rigid, elastic and tension/ compression-only supports	✓	✓	✓	○
Punctual, linear and surface loads, mass, liquid and soil pressure loads, imposed displacements	✓	✓	✓	○
Load area elements	✓	✓	✓	○
Libraries with predefined elements: portal frames, trusses, linear vaults, planar vaults	✓	✓	✓	○
Load case families: Self Weight, Live Loads, Snow, Wind, Seismic, Thermal, Accidental Loads, Dynamic Temporal Loads, Traffic Loads	✓	✓	✓	○
Links between degrees of freedom (DOF's)	✓	✓	✓	○
Fast definition of haunches for linear elements	✓	✓	✓	○
Semi-rigid links between linear elements with user-defined nonlinear behavior	✓	✓	✓	○
Boundary conditions on planar element's edges	✓	✓	✓	○
Compound cross sections	✓	✓	✓	○
CROSS SECTION LIBRARIES				
Parametric cross sections: Concrete, Steel, Timber	✓	✓	✓	○
Cross section libraries: European profiles, UK profiles, AISC/CISC profiles	✓	✓	✓	○
Module for sectional characteristics calculation, including warping constants (I _w) and shear areas	✓	✓	✓	○
Autodesk Advance Steel cross sections (also available for Steel Design)	✓	✓	✓	○
MATERIAL LIBRARIES				
Concrete (EN-206, NFB, STAS 10107/0-90, ACI318M, ACI318, CSA A23.3-04, NTC2008)	✓	✓	✓	○
Steel (EN 10025-2 - 6, EN 10210 -1, EN 10219-1, ASTM, CSA G40.21)	✓	✓	✓	○
Timber (EN14374/14279, EN14080, EN338, NP005)	✓	✓	✓	○
MESHING ENGINES				
Automatic Mesh: Delaunay and Grid	✓	✓	✓	○
Mesh refining: progressive, local and parametric refining	✓	✓	✓	○
Mesh using geometric entities	✓	✓	✓	○
T3 - Q4 and T6 - Q9 finite elements	✓	✓	✓	○
ANALYSIS TYPES				
Static analysis	✓	✓	✓	○
Modal analysis (including RITZ method)	✓	✓	✓	○
Seismic analysis (EC8, P100/2006, P100/2013, PS92, PS92/2010, NTC2008, NTC2018, RPS2011, RPA99-2003, NBC2010, NBC2015, IBC2012, ASCE 7-16)	✓	✓	✓	○
Nonlinear 2nd order static analysis	✓	✓	✓	○
Generalized buckling	✓	✓	✓	○
Transient dynamic analysis	✓	✓	✓	○
Finite elements calculation which can be performed in several steps	✓	✓	✓	○
Multithread and multicore finite element engine	✓	✓	✓	○
Pushover analysis	✓	✓	✓	○
CLIMATIC GENERATOR				
Snow and Wind loads according to EN1991-3 & EN1991-4 (NA for France, Germany, UK, Czech Republic, Poland, Slovakia, Romania)	✓	✓	✓	○
Snow and Wind loads according to NV2009, CR 1-1-3/2012 & CR1-1-4/2012, NTC 2008, NTC2018	✓	✓	✓	○
Snow and Wind loads according to NBC2010, NBC2015, ASCE 7-10, ASCE 7-16	✓	✓	✓	○
AUTOMATIC GENERATOR OF LOADS COMBINATIONS				
Defined combinations (user models can be post-processed)	✓	✓	✓	○
EN1990 (NA for: France, Germany, UK, Czech Republic, Romania, Poland, Slovakia)	✓	✓	✓	○
NBC2010, NBC2015, ASCE 7-10, ASCE 7-16	✓	✓	✓	○
CR 0-2012, BAEL91, CM66, NTC2008, NTC2018	✓	✓	✓	○
Newmark combinations	✓	✓	✓	○
Complete management of concomitance between load cases and load families (rules for exclusion or forced combination)	✓	✓	✓	○
POST PROCESSING				
Saving post-processing views	✓	✓	✓	○
Display results using a set of predefined parameters, to analyze the performance of your design	✓	✓	✓	○
Automatic updates of calculation reports and saved views	✓	✓	✓	○
Result curves	✓	✓	✓	○
Interactive Iso-regions graphical results representation	✓	✓	✓	○
Modal analysis with mode shape components (eigenvectors) and design response spectra seismic analysis	✓	✓	✓	○

FEATURES	STANDARD	PREMIUM	ULTIMATE	Rebar Design & Detailing module
Nonlinear analysis with step-by-step results	✓	✓	✓	○
Time-History analysis computed at a number of subsequent time instants	✓	✓	✓	○
Resultant forces on walls and groups of walls	✓	✓	✓	○
Resultant forces on linear supports	✓	✓	✓	○
Automatic peak smoothing zones on planar elements	✓	✓	✓	○
FEM results displayed along user-defined linear element length ("clipping" functionality)	✓	✓	✓	○
REPORTS GENERATION				
Predefined calculation reports	✓	✓	✓	○
Parametric calculation reports	✓	✓	✓	○
User-defined calculation reports	✓	✓	✓	○
Image insertion	✓	✓	✓	○
Automatic update of calculation reports	✓	✓	✓	○
Detailed design reports for concrete, steel and timber design	✓	✓	✓	○
Export of calculation reports in Word, Excel, PDF file formats	✓	✓	✓	○
IMPORT / EXPORT / BIM LINKS				
Import and Export: Effel, IFC, SDNF, PSS, CIS2, DXF files	✓	✓	✓	○
BIM synchronization with GRAITEC-compatible software and Revit®	✓	✓	✓	○
Export data to Advance Design Connection	✓	✓	✓	○
Import/Export/Synchronization with Autodesk Revit and Autodesk Advance Steel	✓	✓	✓	○
Results packages for Revit	✓	✓	✓	○
Export to DWG	✓	✓	✓	○
REINFORCED CONCRETE MEMBERS DESIGN				
Theoretical reinforcement area for linear and planar elements, longitudinal reinforcement, transverse reinforcement and minimal reinforcement area	○	✓	✓	○
Real reinforcement calculation for beams, according to EC2	○	✓	✓	○
Concrete columns verification using the interaction curves	○	✓	✓	○
Verification of crack openings on linear and planar elements	○	✓	✓	○
Detailed Punching verification on planar elements, according to EC2	○	✓	✓	○
Capacity Design for beams and columns, according to EC2 and EC8	○	✓	✓	○
Implemented regulations: EN1992-1-1 (NA for: France, Germany, UK, Czech Republic, Poland, Slovakia and Romania), BAEL91, ACI 318-14, CAN/CSA A23.3-14, NTC2008, NTC2018	○	✓	✓	○
Theoretical reinforcement area due to torsion effect	○	✓	✓	○
Real deflection calculation for linear and planar elements	○	✓	✓	○
Fire design according to Section 5 of EN 1992-1-2	○	✓	✓	○
STEEL MEMBERS DESIGN				
Buckling length & lateral-torsional buckling length, deflections verification & calculation	○	✓	✓	○
Super element concept	○	✓	✓	○
Steel members strength and stability verification	○	✓	✓	○
Steel cross sections optimization	○	✓	✓	○
Implemented regulations: EN1993-1-1 (National Appendix for: France, Germany, UK, Czech Republic, Poland, Slovakia and Romania); CM66; AISC; CAN/CSA; NTC2008; NTC2018	○	✓	✓	○
Fire design according to EN 1993-1-2	○	✓	✓	○
Structure Designer	○	✓	✓	○
STEEL CONNECTIONS DESIGN				
Steel Connection Design (BIM Designers Steel Connection module)	○	✓	✓	○
Graphical Postprocessing	○	✓	✓	○
Detailed reports with code checks	○	✓	✓	○
Automatic drawings	○	✓	✓	○
TIMBER MEMBERS DESIGN				
Buckling lengths & lateral-torsional buckling lengths, deflections verification & calculation	○	✓	✓	○
Timber members strength and stability verification	○	✓	✓	○
Timber cross sections optimization	○	✓	✓	○
Available standards: EN1995-1-1 (National Appendix for: France, Germany, UK, Czech Republic, Poland, Slovakia and Romania), NTC2008 and NTC2018	○	✓	✓	○
Fire verification according to EN 1995-1-2 (§4.2.2 and §4.2.3)	○	✓	✓	○
REINFORCED CONCRETE DESIGN AND DETAILING MODULES				
Reinforced Concrete Beams design and detailing module	○	○	✓	✓
Reinforced Concrete Columns design and detailing module	○	○	✓	✓
Reinforced Concrete Bearing Walls design and detailing module	○	○	✓	✓

FEATURES	STANDARD	PREMIUM	ULTIMATE	Rebar Design & Detailing module
Reinforced Concrete Shear Walls & groups of Shear Walls design and detailing module	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reinforced Concrete isolated and continuous footings design and detailing module	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Interaction curves, diagrams and stability graphics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Detailed graphical results for performed checks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Automatic 3D parametric rebar cages designed according Eurocodes and North American codes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Detailed design reports for reinforced concrete code checks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Automatic drawings	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Automatic bar schedules	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Design and detailing modules available as standalone apps	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Design and Detailing tools for Autodesk Revit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3D rebar cages export to Autodesk Revit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

- Not Included
- Included